

Audacity 1.2.4

Sound Editing Software

Developed by
Paul Waite
Davis School District

This is not an official training handout of the
Educational Technology Center, Davis School District

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Possibilities

- **Audacity** is a free audio editing and production tool.
- Files can be exported as MP3, wav, or several other formats.
- Audacity can be used to record singing to music as a single file.

Getting Audacity

- **Audacity** is available free on the Internet. ("Audacity" is a trademark of Dominic Mazzoni.)
- In order to save MP3 files, an additional program is needed, lame.dll.
- The address on the Internet is audacity.sourceforge.net.
- **Note** – Be sure to download the LAME MP3 encoder also.

Installing Audacity

- Navigate to the location of the audacity-win-1.2.4b.exe file.
- Double click on the file.
- Click on **Next**, click to accept the terms of the license, and then click on **Next** until the software is installed.

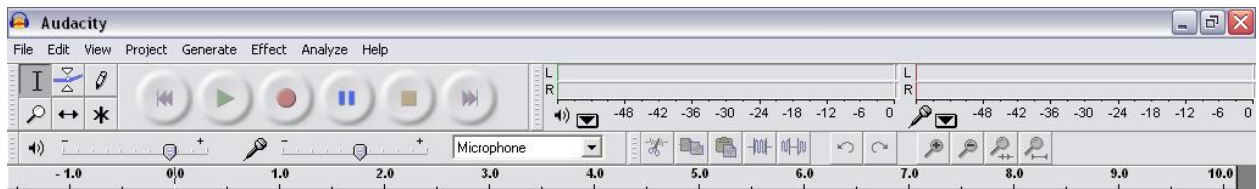
Installing the Lame dll

- Download the LAME MP3 encoder and save it on the computer.
- The first time a file is exported as an MP3, the user will have to identify where the LAME MP3 encoder software is by navigating to it.

Projects

- **Audacity** works in projects. Many tracks of sound to be used at one time.
- Saving the work as a project allows for modification of the file later.
- The file extension of a project is .aup.

Interface Introduction



- The interface is a basic computer interface with buttons and other controls.

Menus

- **File** – includes new, open, export selection and export for wav, mp3, and Ogg Vorbis. Print prints the displayed wave form.
- **Edit** – includes cut, copy, paste, trim, delete, silence, split, and duplicate.
- **View** – includes zoom, history (of edits), and float/dock toolbars.
- **Project** – includes importing audio, labels, midi, and raw data as well as editing the ID3 tags. It also includes creating new tracks and aligning them.
- **Generate** – includes the ability to generate a silence, a tone of a specific frequency, white noise, a click track, or a pluck.
- **Effect** – includes lots of effects such as amplify, change tempo or pitch, equalize, fade in or out, and noise removal.
- **Analyze** – includes plotting the power spectrum.
- **Help** – includes the version of Audacity and a wonderful Help file.

Toolbars

- The four toolbars are the **Control** toolbar, the **Edit** toolbar, the **Mixer** toolbar, and the **Meter** toolbar.















Floating a Toolbar

- A toolbar that is docked can be floated.
- On the **Menu Bar**, click on **View → Float** desired toolbar.
- OR
- Click on the left edge of the toolbar and drag it to the desired location.
- Note** – Floating toolbars are displayed over the screen of other programs if Audacity is open when another program is being used.












Docking a Toolbar

- A toolbar that is floating can be docked.
- On the **Menu Bar**, click on **View → Dock** desired toolbar.




Control Toolbar

Icon	Name	Description
	Selection tool	
	Selection tool	Used to select the portion of the music to listen to or work with.
	Envelope tool	Used to change the volume of the music over a period of time.
	Draw tool	Used to change the wave form in a detailed way.
	Zoom tool	Used to zoom in closely on the selected area.
	Timeshift tool	Used to drag the music in a track forward or backward in time.
	Multi tool	Used to work with various tools depending on the location of the cursor.
	Skip to Start	Click on the Skip to Start button to go to the beginning of the project.
	Play	Click on the Play button to play the project.
	Loop	This becomes available by holding down the Shift key.
	Record	Click on the Record button to begin recording. Tracks already in the project are played through the speaker during the recording.
	Pause	Click on the Pause button to pause the playing of the project.
	Stop	Click on the Stop button to stop the playing of the project.
	Skip to End	Click on the Skip to End button to go to the end of the project.

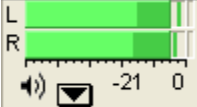
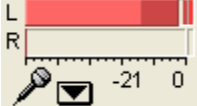


Edit Toolbar

Icon	Name	Description
	Cut	Cut the selection from the track(s).
	Copy	Copy the selection.
	Paste	Paste the selection.
	Trim outside selection	Trim everything outside the selection. (Remove it.)
	Silence selection	Remove the sound from the selection and make it a silence.
	Undo	Undo the last action.
	Redo	Redo the last undo.
	Zoom in	Zoom in on the project.
	Zoom out	Zoom out on the project.
	Fit selection in window	Fit the selection portion to the window.
	Fit project in window	Fit the entire project to the window.

Mixer Toolbar

Icon	Name	Description
	Output Volume Slider	Controls the volume of the sound going out.
	Recording Volume Slider	Controls the volume of the sound being recorded.
	Input Source	Used to choose the source of the sound being recorded.

Meter Toolbar

Icon	Name	Description
	Output Meter	The Output Meter indicates the output levels.
	Recording Meter	The Recording Meter indicates the recording levels.
	Output Choices	Click on the down arrow to choose between a horizontal or vertical display of the meter and between having the scale displayed in linear or dB. The meter can also be disabled.
	Recording Choices	Click on the down arrow to choose between a horizontal or vertical display of the meter and between having the scale displayed in linear or dB. The meter can also be disabled.

Tracks

-

Audio Track

- The audio track displays the audio in a waveform, the spectrum, or pitch.

Label Track

- Label tracks allow for notes on the timing of audio tracks, etc.
- To insert a label track, on the **Menu Bar**, click on **Project → New Label Track**.
- To add notes to the track, click where the note is to be added and then type the note.

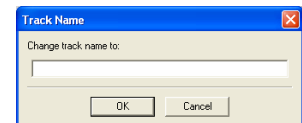
Time Track

- The time track is for changing the playback rate over time.

Working with Tracks

Naming a Track

- Click on the **Track Pop-Down Menu** and choose **Name....**
- Click in the box and type a name for the track.
- Click on **OK**.



Moving a Track

- Click on a blank area of the track's left box and drag to the desired location
- OR click on the **Track Pop-Down Menu** and choose **Move Track Up** or **Move Track Down**.

Deleting a Track

- Click on the X in the top left corner of the track.

Separating a Stereo Track

- Click on the **Track Pop-Down Menu** and choose **Split Stereo Track**.

Creating a Stereo Track

- Move the tracks that are to be made into a stereo track next to each other.
- Click on the **Track Pop-Down Menu** of the top track and choose **Make Stereo Track**.

File Formats

- Sound files can be saved in a variety of formats.
- **Audacity Project format (.aup)**
 - This is the file format for projects in Audacity.
 - Audacity can open and save files in this format.
- **Wave (.wav)**
 - This is the uncompressed audio file format for Windows.
 - The file size is large.
 - Audacity can read and write files in this format.
- **Audio Interchange File format (.aiff)**
 - This is the uncompressed audio file format for Macintosh.
 - Audacity can read and write files in this format.

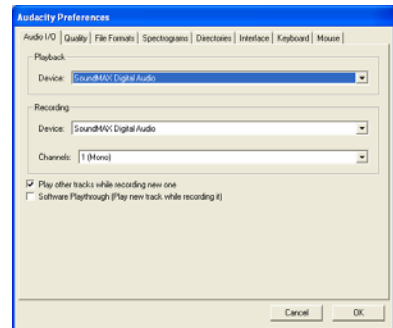
- **MP3**
 - This is a popular compressed audio file format which compresses the file at a ratio of 10:1 with very little sound degradation.
 - Audacity can import and export files in this format.
- **Ogg Vorbis**
 - This is an audio file format similar to MP3 which is compressed and of similar quality.
 - Audacity can import and export files in this format.

Setting Preferences

- On the **Menu Bar**, click on **Edit → Preferences...**

Audio I/O

- Click on the **Audio I/O** tab.
- In the **Playback** section, click on the down arrow and select the desired playback device.
- In the **Recording** section, click on the **Device** down arrow and choose the desired recording device.
- Click on the **Channel** down arrow and choose the desired channel.

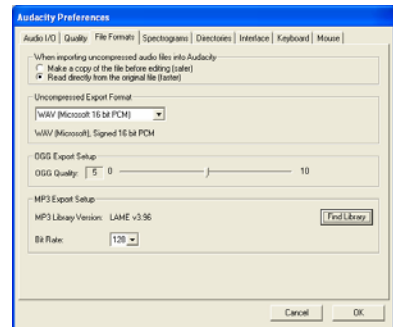


Quality

- Click on the **Quality** tab.
- Adjust the sample rate and other items as desired.

File Formats

- Click on the **File Formats** tab.
- In the **When importing...** section, decide whether to take the safer route or the faster route.
- In the **Uncompressed Export Format** section, click on the down arrow and choose the desired format.
- In the **OGG Export Setup** section, click and drag the slider to the desired location.
- In the **MP3 Export Setup** section, click on the **Find Library** button, navigate to the location of the LAME dll, click on it, then click on the **Open** button.



Spectrograms

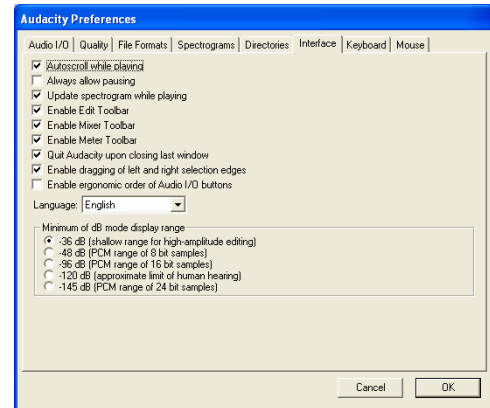
- Click on the **Spectrograms** tab.
- Choose the desired spectrogram.

Directories

- Click on the **Directories** tab.
- Click on the **Choose** button and navigate to the desired location for temporary storage.

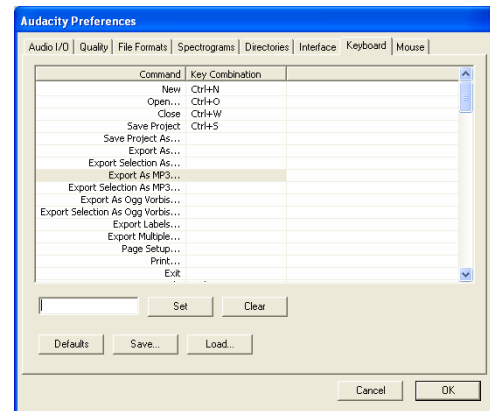
Interface

- Click on the **Interface** tab.
- Make the desired selection to control the interface of the program.
- Removing the checkmark from **Update spectrogram while playing** may improve the playback on older computers.
- Notice that the **Edit** toolbar, the **Mixer** toolbar, and the **Meter** toolbar can be enabled here.
- In the **Language** box, click on the down arrow and choose the desired language for the interface.
- Choose the interface desired.



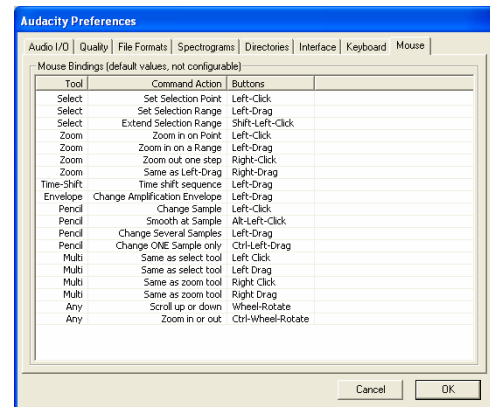
Keyboard

- Click on the **Keyboard** tab.
- Click on the desired command.
- Click in the box to the left of the **Set** button.
- Enter the desired keystroke to run the command. i.e. Hold down the Control key and press the desired letter.
- Click on the **Set** button.
- To clear a Key Combination, click on the desired command and then click on the **Clear** button.
- Click on the **Save** button to save the keyboard settings.
- Click on the **Load** button to retrieve previously saved keyboard settings.
- Click on the **Defaults** button to restore original settings of the keyboard.



Mouse

- Click on the **Mouse** tab.
- This is a list of the mouse commands.
- The list is set and cannot be changed.



Starting a New Project

- On the **Menu Bar**, click on **File → New**.
- A new window opens for the new project.

Importing Files

- On the **Menu Bar**, click on **Project → Import Audio....**
- Navigate to the location of the desired audio file.
- Click on the desired audio file.
- Click on the **Open** button.

Recording a Sound

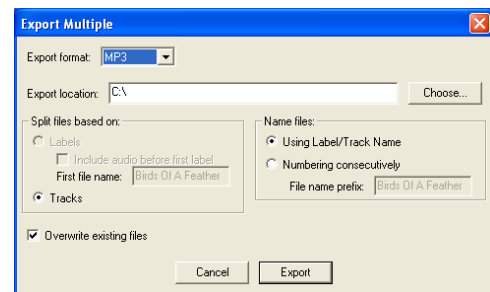
- Click in the project where the sound is to begin,
- Click on the **Record** button on the Toolbar.
- Click on the **Stop** button when the recording is completed.

Exporting Files

- Projects can be saved, but a playable audio file must be imported.
- Determine the type of file that is to be exported.
- In the export process, the tracks will be mixed down to two stereo channels.
- On the **Menu Bar**, click on **File** ➔ and choose the desired format for the export.
 - **Export as WAV...** - Exports the project as a .wav file.
 - **Export selection as WAV...** - Exports the selection as a .wav file.
 - **Export as MP3...** - Exports the project as an .mp3 file.
 - **Export selection as MP3...** - Exports the selection as an .mp3 file.
 - **Export as Ogg Vorbis...** - Exports the project as an .ogg file.
 - **Export selection as Ogg Vorbis...** - Exports the selection as an .ogg file.

Exporting Multiple Files

- Each of the tracks can be exported as a separate file.
- On the **Menu Bar**, click on **File** ➔ **Export Multiple...**
- Click on the **Export format:** down arrow and choose the desired file format. All of the tracks are exported as the same file format.
- Click on the **Choose** button at the end of the **Export location:** box and navigate to and choose the desired location for the export.
- If there are label tracks, the files can be split by the label tracks. If not, the files are split as tracks.
- In the **Name files:** section, choose **Using Label/Track Name** or choose **Numbering consecutively**.
- If numbering consecutively, click in the **File name prefix:** box and enter the desired prefix.
- To overwrite existing files, select **Overwrite existing files**.
- Click on the **Export** button.



Editing Sounds

Cut

- Highlight the selection of the track to be cut.
- On the **Menu Bar**, click on **Edit** ➔ **Cut**.

Copy

- Highlight the selection of the track to be copied.
- On the **Menu Bar**, click on **Edit** ➔ **Copy**.

Paste

- Click in the track where the sound is to be pasted.
- On the **Menu Bar**, click on **Edit** ➔ **Paste**.
- **Note** – In a stereo track, the sound will only be pasted in the top track, causing a change in the alignment of the two parts of the stereo track.

Trim

- Highlight the selection of the track that is to be kept.
- On the **Menu Bar**, click on **Edit** ➔ **Trim**.
- **Note** – Only the selected area is left and the rest of the track is a silence.

Delete

- Highlight the selection of the track that is to be deleted.
- On the **Menu Bar**, click on **Edit → Delete**.

Split

- Highlight the selection of the track that is to be split.
- On the **Menu Bar**, click on **Edit → Split**.
- The selection is removed from the track and created as a track by itself below. The split portion is still in the same location on the timeline.

Duplicate

- Highlight the selection of the track that is to be duplicated.
- On the **Menu Bar**, click on **Edit → Duplicate**.
- The selection is created as a track by itself below. The duplicated portion is still in the same location on the timeline.

Silence

- Highlight the selection of the track that is to be silenced.
- On the **Menu Bar**, click on **Edit → Silence**.

Working with Multiple Tracks

Adding an Audio Track

- On the **Menu Bar**, click on **Project → New Audio Track**.

Adding a Stereo Track

- On the **Menu Bar**, click on **Project → New Stereo Track**.

Moving Tracks

- On the track, click on the down arrow of the button with the name of the track and choose **Move Up** or **Move Down**
- OR click on a blank area of the box on the left side of the track and drag it to the desired location.

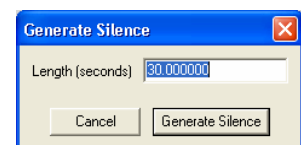
Adding Tracks

- On the **Menu Bar**, click on **Project → New Audio Track** or other type of track as desired.

Generating Sounds

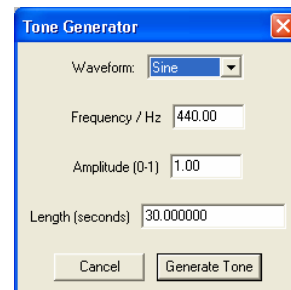
Generating a Silence

- Click in the project on the track where the silence is to be added
- OR click and drag in the track to indicate the location and length of the silence.
- On the **Menu Bar**, click on **Generate → Silence....**
- Enter the length, in seconds, the silence is to last.
- Click on the **Generate Silence** button.



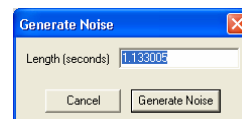
Generating a Tone

- Click in the project on the track where the tone is to be generated
- OR click and drag in the track to indicate the location and length of the tone.
- On the **Menu Bar**, click on **Generate → Tone....**
- Click on the down arrow and choose the **Waveform**.
- Enter the frequency and the amplitude desired.
- Enter the length, in seconds, the tone is to last.
- Click on the **Generate Tone** button.



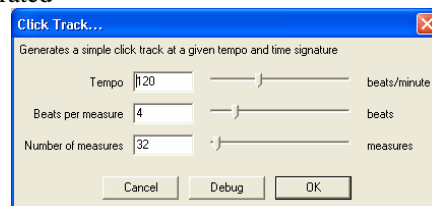
Generating White Noise

- Click in the project on the track where the tone is to be generated.
- OR click and drag in the track to indicate the location and length of the white noise.
- On the **Menu Bar**, click on **Generate → White Noise....**
- Enter the length, in seconds, the white noise is to last.
- Click on the **Generate Noise** button.



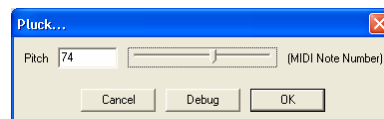
Generating a Click Track

- Click in the project on the track where the click track is to be generated
- On the **Menu Bar**, click on **Generate → Click Track**.
- In the **Tempo** box, enter the tempo of the clicks OR click and drag the slider to show the desired tempo.
- In the **Beats per measure** box, enter the desired number of beats per measure of the clicks OR click and drag the slider to show the desired beats per measure.
- In the **Number of measures** box, enter the desired number of measures the click track should last OR click and drag the slider to show the desired number of measures the click track should last.
- Click on **OK**.



Generating a Pluck

- Click in the project on the track where the tone is to be generated
- On the **Menu Bar**, click on **Generate → Pluck....**
- In the **Pitch** box, enter the tempo of the clicks OR click and drag the slider to show the desired pitch.
- Click on **OK**.



Effects

- Effects make use of plugins. These may have problems. Always save the project before applying an effect.
- The table below lists the effects.
- Select the portion of the music to be effected.
- On the **Menu Bar**, click on **Effect** ➔ and then select the desired effect.

Effects Table	
Effect	Description of Effect
Amplify...	Amplify increases the volume of the clip.
BassBoost...	BassBoost enhances the bass range.
Change Pitch...	Change pitch changes the pitch without changing the tempo.
Change Speed...	Change speed changes the tempo and the pitch. Increasing the speed raises the pitch and increases the tempo. Decreasing the speed lowers the pitch and decreases the tempo.
Change Tempo...	Change speed changes the tempo without changing the pitch.
Compressor...	The compressor changes the dynamic range of the clip, causing the louder portions to become softer.
Echo...	Echo repeats the selection with a decay. This does not change the length of the selection. It may be wise to generate silence at the end of the selection.
Equalization...	Equalization boosts or reduces frequencies to even them out.
Fade In...	Fade in fades the selection in.
Fade Out...	Fade out fades the selection out.
FFT Filter...	FFT filter is similar to equalization.
Invert...	Invert flips the wave vertically.
Noise Removal...	Noise removal helps remove unwanted noise from the recording.
Normalize...	Normalize allows for the correction of an offset.
Phaser...	Phaser allows phase shifting.
Repeat...	Repeat causes the clip to be repeated the desired number of times.
Reverse...	Reverse the highlighted section.
Wahwah...	Add a wahwah effect to the highlighted selection.
Cross Fade In...	Fades the selection from zero volume to full volume.
Cross Fade Out...	Fades the selection from full volume to zero volume.
Delay...	Fades the volume of the selection and adds the indicated delay.

Analyzing

- Plotting the Spectrum
- Select a portion of a track to be analyzed.
- On the **Menu Bar**, click on **Analyze** ➔ **Plot Spectrum**.
- Beat Finder
- Select a portion of a track to be analyzed.
- On the **Menu Bar**, click on **Analyze** ➔ **Beat Finder**.
- Silence Finder
- Select a portion of a track to be analyzed.
- On the **Menu Bar**, click on **Analyze** ➔ **Silence Finder**.

